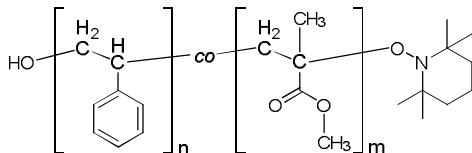**Sample: Poly(Styrene–*co*–Methyl Methacrylate), α-Hydroxy, ω-TEMPO-moiety terminated random copolymer**

Sample # P20296-SMMAranOHT

Structure:

Composition:
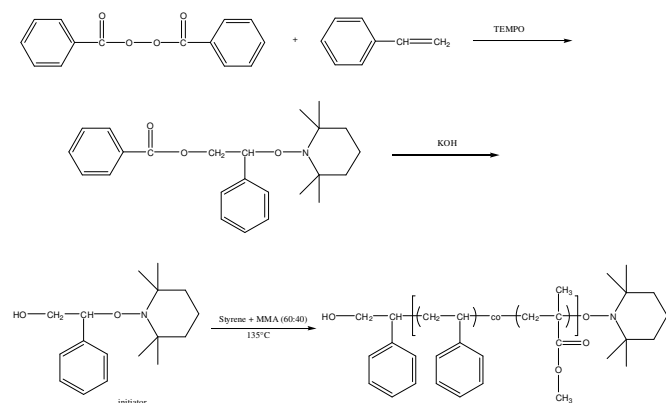
M_n x 10^3 (g/mol)	M_w/M_n (PDI)
25.5	1.14

Polystyrene content: 94 mol %

Synthesis:

α-Hydroxy,ω-TEMPO-terminated poly(styrene–*co*–me-thyl methacrylate) was prepared by nitroxide-mediated radical polymerization at 135°C. The reaction scheme is shown below:


Characterization:

The molecular weight and polydispersity index (PDI) of the product was determined by size exclusion chromatography (SEC), using polystyrene as a standard. The ratio between polystyrene and poly(methyl methacrylate) in PS-PMMA copolymer was calculated from ^{1}H NMR spectroscopy by comparing the peak area of the PS phenyl protons at 6.5–7.3 ppm and the peak area of PMMA methyl protons at 2.6–3.6 ppm.

Solubility:

Poly(styrene–co–methyl methacrylate) is soluble in THF, DMF, toluene, and chloroform. It precipitates from methanol and hexanes.
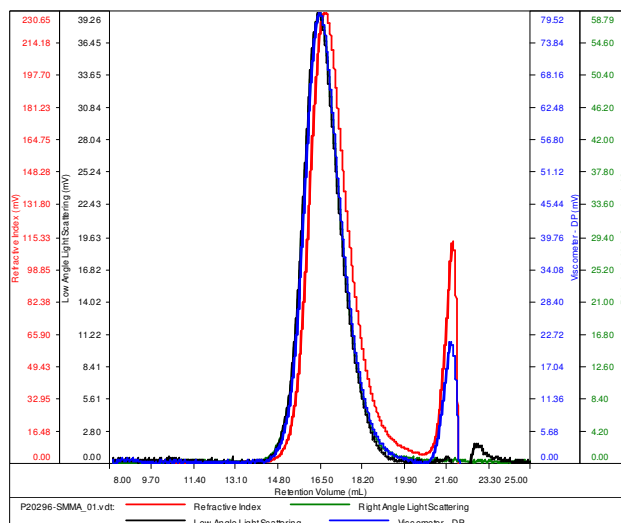
^{1}H NMR spectrum of the copolymer in CDCl₃:
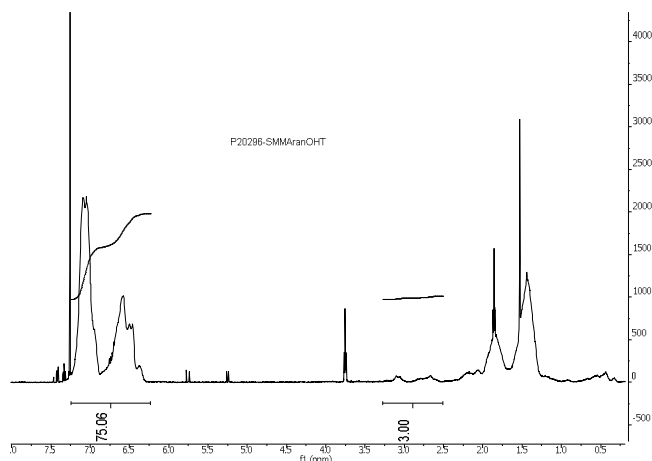
SEC elugram of the copolymer:

SAMPLE ID: P20296-SMMAranOHT

Conc (mg/mL)	9.8430
dn/dc (mL/g)	0.1650
Method	ps80k-21Jan2016-DMF-0000.vcm
Solvent	DMF w 0.023M LiBr
Column	PSS

Sample	Mn	Mw	Mp	Mw/Mn	IV
P20296-SMMA_01.vdt	25,699	29,173	28,766	1.135	0.1594